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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MAYO III, WILLIAM H

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 05/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/454,333

Applicant(s)

SCHILSON ET AL.

Examiner

William H. Mayo III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) 31-79 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 & 3. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-30, in Paper No. 5 is acknowledged.
2. Claims 31-79 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected Groups II-V, there being no allowable generic or linking claim.

Priority

3. If applicant desires priority under 35 U.S.C. 120 based upon a previously filed copending application, specific reference to the earlier filed application must be made in the instant application. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "**now Patent No. _____**" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

If the application is a utility or plant application filed on or after November 29, 2000, any claim for priority must be made during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen

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months from the filing date of the prior application. See 37 CFR 1.78(a)(2) and (a)(5). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A priority claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed claim for priority under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) a surcharge under 37 CFR 1.17(t), and (2) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Commissioner may require additional information where there is a question whether the delay was unintentional. The petition should be directed to the Office of Petitions, Box DAC, Assistant Commissioner for Patents, Washington, DC 20231.

Information Disclosure Statement

4. The information disclosure statements filed December 3, 1999 and January 22, 2001, have been submitted for consideration by the Office. They have been placed in the application file and the information referred to therein has been considered.

Drawings

5. The drawings are objected to because Figures 18-23 lack the proper cross-hatching which indicates the type of materials which may be in an invention.

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Specifically, Figures 18-23 do not contain the cross hatching to indicate the conductor material. The applicant should refer to MPEP Section 608.02 for the proper cross-hatching of materials.

6. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Correction is required.

Specification

7. The abstract of the disclosure is objected to because lines 4-5 are confusing. Specifically, the terms "between and upper a lower insulator layer conductors between the upper and lower layer adjacent the seams" is improper grammar. The applicant should correct the above terms.

Correction is required. See MPEP § 608.01(b).

Claim Objections

8. Claims 1, 10, 11, 15, 18-21, and 30 are objected to because of the following informalities:

9. In claim 1, lines 7 & 8, after the term ""wherein", insert the term – said or the-- (both occurrences).

10. In claim 10, line 1, after the term ""wherein", insert the term – said or the--.

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11. In claim 11, line 1, after the term "wherein", insert the term – said or the--.
12. In claim 15, line 1, after the term "wherein", insert the term – said or the--.
13. In claim 18, lines 6 & 7, after the term "wherein", insert the term – said or the (both occurrences).
14. In claim 19, line 1, after the term "wherein", insert the term – said or the--.
15. In claim 20, line 1, after the term "wherein", insert the term – said or the--.
16. In claim 21, lines 6 & 7, after the term "wherein", insert the term – said or the (both occurrences).
17. In claim 30, lines 7 & 8, after the term "wherein", insert the term – said or the (both occurrences).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 1-2, 6, 9, 11, 13, 15, 22-23, 25, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Hara (Pat Num 5,250,127). Hara discloses a well-known flat electrical cable (Fig 3). Specifically, with respect to claim 1, Hara discloses a flat electrical cable (Fig 3) comprising an upper insulator layer (upper 10), a lower insulator layer (lower 10) connected to the upper insulator layer (upper 10) along

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a substantially continuous parallel spaced apart seam (denoted as 20), and an intermediate layer comprised of individual strands of conductors (2) that lie adjacent and substantially parallel to the seams (20), wherein the conductors do not have an adhesive residue thereon (Col 3, lines 61-68), wherein the seams (20) positioned between the adjacent conductors (2) have a textured surface pattern (denoted as 25) and wherein seams (30) are positioned along the edges (side surfaces on both right and left ends) of the flat electrical cable (Fig 3) have substantially smooth surface pattern (see 30). With respect to claim 2, Hara discloses that the upper layer (upper 10) includes a plurality of raised surfaces (denoted as 35) running parallel to each other along a length of the cable (Fig 3). With respect to claim 6, Hara discloses that the electrical cable (Fig 3) has parallel seams (20). With respect to claim 9, Hara discloses that a seam (30) is positioned along an edge (side surfaces on both right and left ends) of the flat electrical cable (Fig 3) to form a smooth edge (see 30). With respect to claim 11, Hara discloses that a seam (30) is positioned along an edge (side surfaces on both right and left ends) of the flat electrical cable (Fig 3) to form a smooth edge (see 30). With respect to claim 13, Hara discloses that the cable (Fig 3) includes a continuous seam (40) for a nonbonded area where the upper and lower insulator layers (upper and lower 10) are not connected (where the conductors are disposed). With respect to claim 15, Hara discloses that the seam (30) positioned between adjacent conductors have a knurled textured surface pattern (25). With respect to claim 22, Hara discloses a flat electrical cable (Fig 3) comprising an upper insulator layer (upper 10), a lower insulator layer (lower 10) connected to the upper insulator layer (upper 10) along a

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substantially continuous parallel spaced apart seam (denoted as 20), and an intermediate layer comprised of a group of conductors (multiple 2's) that lie adjacent and substantially parallel to the seams (20), wherein the conductors do not have an adhesive residue thereon (Col 3, lines 61-68). With respect to claim 23, Hara discloses that the group of conductors (multiple 2's) includes a single conductor (2). With respect to claim 25, Hara discloses that conductor group is a tandem conductor group (multiple 2's) that includes two substantially identical conductors (1st and 2nd 2's) positioned adjacent to each other (Fig 3). With respect to claim 30, Hara discloses a flat electrical cable (Fig 3) comprising an upper insulator layer (upper 10), a lower insulator layer (lower 10) connected to the upper insulator layer (upper 10) along a substantially continuous parallel spaced apart seam (denoted as 20), and an intermediate layer comprised of individual strands of conductors (2) that lie adjacent and substantially parallel to the seams (20), wherein the conductors do not have an adhesive residue thereon (Col 3, lines 61-68), wherein the seams (20) positioned between the adjacent conductors (2) have a first textured surface pattern (25) and the seams (30) are positioned along the edges (side surfaces on both right and left ends) of the flat electrical cable (Fig 3) have substantially second surface pattern (see 30), wherein the surface roughness of the first textured surface pattern (25) is greater than a surface roughness of the second surface pattern (smooth surface at 30).

With respect to claims 6, 9, and 11, the method limitations, such as ultrasonically welding or being cut have been considered, however, based on the fact that the method as claimed doesn't add any patentable or distinguishable claimed structure to the claim,

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and the final product as claimed is the same as the prior art, the method is not germane to patentability. Specifically, it has been held that the patentability of a product does not depend on its method of production, where the method as claimed doesn't result in a structural difference between the prior art and the claimed invention. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 3-4, 7-8, 10, 12, 16-17, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara (Pat Num 5,250,127) in view of Richter (Pat Num 3,168,617). Hara discloses a well-known flat cable (Fig 3) as disclosed with reference to claims 1 and 6 above. Specifically, with respect to claim 3, Hara discloses that the cable (Fig 3) includes seven conductors (2). With respect to claim 18, Hara discloses a flat electrical cable (Fig 3) comprising an upper insulator layer (upper 10) having a ribbed surface (25), a lower insulator layer (lower 10) connected to the upper insulator layer (upper 10) along a substantially continuous parallel spaced apart seam (denoted as 20), and individual strands of conductors (2) that lie adjacent and substantially parallel to the seams (20) between the upper and lower insulation layers (upper and lower 10), wherein the seams (20) positioned between the adjacent conductors (2) have

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a textured surface pattern (denoted as 25) and wherein seams (30) are positioned along the edges (side surfaces on both right and left ends) of the flat electrical cable (Fig 3) have substantially smooth surface pattern (see 30). With respect to claim 19, Hara discloses that the seam (30) positioned between adjacent conductors have a knurled textured surface pattern (25). With respect to claim 20, Hara discloses that the seams (20) positioned between adjacent conductors (2) have repeating linear segment textured surface patterns (25), wherein the repeating linear segment textured surface patterns (25) are substantially perpendicular to a length (shown at 45) of the flat electrical cable (Fig 3). With respect to claim 21, Hara discloses a flat electrical cable (Fig 3) comprising an upper insulator layer (upper 10) having a ribbed surface (25), a lower insulator layer (lower 10) connected to the upper insulator layer (upper 10) along a substantially continuous parallel spaced apart seam (denoted as 20), and individual strands of conductors (2) that lie adjacent and substantially parallel to the seams (20) between the upper and lower insulation layers (upper and lower 10), wherein the seams (20) positioned between the adjacent conductors (2) have a first zone (surface over 7th conductor) and a second zone (top 30), wherein the first zone (surface over 7th conductor) is adjacent to one conductor (2) of the conductors (multiple 2's) and extends substantially parallel to the conductor (2) wherein the first zone (surface over 7th conductor) has a knurled textured surface pattern (denoted as 25) and wherein the second zone (top 30) is located between the first zone (surface over 7th conductor) and one edge of the edges (bottom 30), wherein the second zone (top 30) has a smooth textured surface pattern (see top 30 edge).

However, Hara doesn't necessarily disclose the top and bottom insulator layers being polyester (claims 3, 18, and 21), nor the conductors being copper or copper alloy (claim 4, 18, and 21), nor one of the seams along the edge being broader than the seam positioned between adjacent conductors (claims 7-8 & 10), nor the conductors being exposed at an end beyond the upper and lower insulator layers (claim 12), nor the cable having a linear density of substantially 4.35 grams per foot (claim 17).

Richter teaches flat flexible multi-conductor cable (Figs 1-2) that has optimum characteristics of resistance to abrasion, dielectric strength, tensile strength, and mechanical stability (Col 2, lines 50-55). Specifically, with respect to claim 3, Richter teaches a flat electrical cable (Figs 1-2) comprising a plurality of conductors (10), which may be made of copper (Col 3, lines 18-20). With respect to claim 4, Richter teaches that the flat electrical cable (Figs 1-2) has a top insulator layer (10) and a bottom insulator layer (11), which may be made of polyester (Col 3, lines 45-55). With respect to claim 7, Richter teaches that the flat cable (Fig 2) comprising at least one seam (denoted as 20) along the edge (left side) which is broader (i.e. thicker) than the seams (denoted as 30) positioned adjacent the conductors (10). With respect to claim 8, Richter teaches that the at least one seam (denoted as 20) positioned along the edge (left side) of the flat cable (Fig 2) is broader (i.e. thicker) than the seams (denoted as 30) positioned adjacent the conductors (10). With respect to claim 10, Richter teaches that the flat cable (Fig 2) comprising at least one seam (denoted as 20) along the edge (left side) which is broader (i.e. thicker) than the seams (denoted as 30) positioned adjacent the conductors (10). With respect to claim 12, Richter teaches that the cable (Fig 1) has

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conductors (10) that are exposed at an end beyond the upper and lower insulator layers (11 & 12 respectively). With respect to claim 17, Richter teaches that the flat cable (Fig 3) comprises a conductor (10) that is 0.0015 inch by 0.030 in thick wherein 30 conductors (10) in a 100 foot roll weight less than 2 pounds and has a thickness of 0.008 inch (i.e. density = mass per volume), therefore the density would be lower than 4.35 grams/foot. With respect to claim 18, Richter teaches a flat electrical cable (Figs 1-2) comprising a plurality of conductors (10), which may be made of copper (Col 3, lines 18-20) that are surrounded by a top insulator layer (10) and a bottom insulator layer (11), which may be made of polyester (Col 3, lines 45-55). With respect to claim 21, Richter teaches a flat electrical cable (Figs 1-2) comprising a plurality of conductors (10), which may be made of copper (Col 3, lines 18-20) that are surrounded by a top insulator layer (10) and a bottom insulator layer (11), which may be made of polyester (Col 3, lines 45-55).

With respect to claims 3-4, 18, and 21, it would It would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the flat cable of Hara to comprise the conductor to be made of known materials such as copper and the insulator layers to be made of known materials such as polyester as taught by Richter because Richter teaches that copper conductors are commonly utilized in flat cable (Col 1, lines 18-20) and that insulators made of common materials, such as polyester (PET, Mylar), result in an insulator having high flexibility, stability, and long life (Col 3, lines 69-73) and since it has been held to be within general

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skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to claims 7-8 & 10, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the flat cable of Hara to comprise the at least one seam along the edge to be broader than the seams positioned adjacent the conductors as taught by Richter because Richter teaches that such a configuration provides a flat cable having optimum characteristics of resistance to abrasion, dielectric strength, tensile strength, and mechanical stability (Col 2, lines 50-55).

With respect to claim 12, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the flat cable of Hara to comprise the conductors to exposed at an end beyond the upper and lower insulator layers as taught by Richter because Richter teaches that such a configuration prepares a cable end for connection to other electrical devices (Col 5, lines 46-48).

With respect to claim 17, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the flat cable of modified Hara to comprise a linear density of substantially 4.35 grams per foot, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With respect to claims 8, 18, and 21, the method limitations, such as ultrasonically welding or being produced by an ultrasonic welding, have been considered, however, based on the fact that the method as claimed doesn't add any

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patentable or distinguishable claimed structure to the claim, and the final product as claimed is the same as the prior art, the method is not germane to patentability.

Specifically, it has been held that the patentability of a product does not depend on its method of production, where the method as claimed doesn't result in a structural difference between the prior art and the claimed invention. *In re Thorpe*, 777 F2d 695, 698, 227 USPQ 964, 966.

22. Claims 5, 24, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara (Pat Num 5,250,127) in view of Huber (Pat Num 4,952,020). Hara discloses a well-known flat cable (Fig 3) as disclosed with reference to claims 1, 22, and 25 above.

However, Hara doesn't necessarily disclose one of the conductors being a fiber optic cable (claim 5), nor the one of the conductor groups including a fiber optic cable (claim 24), nor one of the conductor groups including a wire rope conductor group, wherein the wire rope group includes a plurality of wire conductors wound together (claim 25), nor one of the conductor groups including a wire rope conductor group, wherein the wire rope group includes a plurality of wire conductors wound together (claim 29).

Huber teaches a ribbon cable (Figs1-3) having optical fibers and electrical conductors. Specifically, with respect to claim 5, Huber teaches ribbon cable (1, Fig 3) which comprises at least one optical cable (2) and at least one conductor (3) spaced side by side surrounded by an insulation (4). With respect to claim 24, Huber teaches at least one of the groups of conductors (2 & 3) comprises at least one fiber optic cable

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(3). With respect to claim 25, Huber teaches that at least one of the conductor groups (2 & 3) comprises a wire rope conductor group (both 3's), wherein the wire rope groups (3) includes a plurality of wire conductors (individual conductors denoted 20 surrounding a core wire denoted as 30) wound together (Fig 3). With respect to claim 29, Huber teaches that at least one of the conductor groups (2 & 3) comprises a wire conductor group (both 3's), wherein the wire rope group (3) includes a plurality of wire conductors (individual conductors denoted 20 surrounding a core wire denoted as 30) wound together (Fig 3).

With respect to claims 5 & 24, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the flat cable of Hara to comprise at least one optical cable as taught by Huber because it is well known in the art of cables utilizing optical fibers in a cable provides a cable with significant advantages such as increased band width, reduction of weight, and utilizing less space thereby forming a cable that is lighter, smaller, and has superior transmitting capability.

With respect to claims 25 & 29, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the flat cable of Hara to comprise at least one optical cable as taught by Huber because it is well known in the art of cables utilizing stranded conductors rather than solid conductors provides a cable with increased flexibility to enable better routing of the cable.

23. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hara (Pat Num 5,250,127) in view of Love (Pat Num 3,239,916). Hara discloses a well-known flat cable (Fig 3) as disclosed with reference to claim 1 above. Specifically, with

respect to claim 14, Hara discloses that the cable (Fig 3) includes a continuous seam (40) for a non-bonded area where the upper and lower insulator layers (upper and lower 10) are not connected (where the conductors are disposed).

However, Hara doesn't necessarily disclose the inner and lower insulator windows comprising windows to expose the conductors (claim 14).

Love teaches a ribbon cable (Figs 1-8) which is easily connected to electrical components even at points intermediate to it's ends (Col 1, lines 54-56). Specifically, with respect to claim 14, Love teaches a ribbon cable (Fig 1) comprising an upper layer of insulator (11) and an lower layer of insulator (12), made of polyester, and an intermediate layer comprising conductors (13-17) between the upper and lower insulator layers (11 & 12), wherein an the upper and lower insulator windows (11 & 12) comprise windows (20) to exposed the conductors (13-17, Fig 1).

With respect to claim 14, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the flat cable of Hara to comprise the inner and lower insulator windows comprising windows to expose the conductors as taught by Love because Love teaches that such a configuration provides a cable with a unique way to fabricate the ribbon cable segments of any desired length, shape, and configuration (Col 5, lines 70-75) to thereby ensure that the conductors are easily connected to electrical components even at points intermediate to it's ends (Col 1, lines 54-56).

24. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara (Pat Num 5,250,127) in view of Coon (Pat Num 4,780,157). Hara discloses a well-known flat cable (Fig 3) as disclosed with reference to claim 22 above.

However, Hara doesn't disclose one of the conductor groups including a dual stacked conductor group, wherein the dual stacked group includes two substantially identical conductors, wherein a first conductor of the two substantially identical conductors is stacked on a second conductor of the two substantially identical conductors of the dual stacked conductor group (claim 26), nor one of the conductor groups including a triple stacked conductor group, wherein the dual stacked group includes three substantially identical conductors, wherein a first conductor of the three substantially identical conductors is stacked on a second conductor of the three substantially identical conductors of the triple stacked conductor group, and wherein the second conductor of the three substantially identical conductors is positioned adjacent to a third conductor of the three substantially identical conductors of the triple stacked conductor group (claim 27).

Coon teaches a ribbon cable (Figs 4-6) having various configurations. Specifically, with respect to claim 26, Coon teaches a ribbon cable (Fig 6) comprising a dual stacked conductor group (210), wherein the dual stacked group (210) includes two substantially identical conductors (top and bottom 18), wherein a first conductor (top 18) of the two substantially identical conductors (top and bottom 18) is stacked on a second conductor (bottom 18) of the two substantially identical conductors (top and bottom 18) of the dual stacked conductor group (top and bottom 18). With respect to claim 27,

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Coon teaches that the ribbon cable (Fig 6) may comprise an unlimited number of conductors (18) positioned in one or more ribbons may be used to form ribbon cable (210), therefore the ribbon cable may be a triple stacked conductor group (210), wherein the dual stacked group (210) includes three substantially identical conductors (18), wherein a first conductor of the three substantially identical conductors would be stacked on a second conductor of the three substantially identical conductors of the triple stacked conductor group, and wherein a second conductor of the three substantially identical conductors would be positioned adjacent to a third conductor of the three substantially identical conductors of the triple stacked conductor group (Cols 3-4, lines 65-68 & 1-2 respectively).

With respect to claim 26, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the ribbon cable of Hara to comprise the multiple layered conductor configuration as taught by Coon because Coon teaches that folding a ribbon cable such that it has multiple layers of conductors provides an improved cable configuration wherein there is no limitations as to the number of conductors may be utilized (Col 1 & 2, lines 65-68 & 1-2), thereby increasing the electrical capacity of the cable with a specified width without increased the width.

With respect to claim 27, it would have been obvious to one having ordinary skill in the art, at the time the invention was made to modify the ribbon cable of Hara to comprise a unlimited amount of conductors, thereby forming a cable unlimited stacks of conductors, as taught by Coon since a triple stacked group of conductor having three

substantially identical conductors, wherein a first conductor of the three substantially identical conductors would be stacked on a second conductor of the three substantially identical conductors of the triple stacked conductor group, and wherein a second conductor of the three substantially identical conductors would be positioned adjacent to a third conductor of the three substantially identical conductors of the triple stacked conductor group appears to be in the scope of Coon and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. (*St. Regis Paper Co v. Bemis Co.*, 193 USPQ 8).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Haldeman, Jr (Pat Num 3,586,757), Erpheid (Pat Num 3,459,879), and Fritz et al (Pat Num 4,149,026), all of which disclose multiple stacked conductor configurations for a ribbon cable, Nozick (Pat Num 4,635,359), which discloses a ribbon cable comprising windows in the insulation, Nguyen et al (Pat Num 5,276,759), Keller (Pat Num 5,668,912), and Nguyen (Pat Num 5,502,287), all of which disclose flat cables comprising electrical conductors and fiber optic elements, Christiansen et al (Pat Num 4,589,584), Crimmins et al (Pat Num 3,523,844), and Emmel (Pat Num 3,802,974), all of which disclose methods of making a flat cable, Parker et al (Pat Num 5,554,825) and Kuo (Pat Num 4,219,928), both of which disclose flat cable configurations.

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Communication

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30 a. m. -6:00 p.m. (alternating Friday's off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'William H. Mayo III', with a stylized flourish at the end.

WHM III
May 8, 2002

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